



EMERGENCY RESPONSE REVIEW

U.S. Environmental Protection Agency, Region 6

Double B Ammonia Release, Meridian, Texas

Final Report :: September 26, 2007

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EPA Region 6 is issuing this Emergency Response Review as part of its ongoing effort to protect human health and the environment by responding effectively to chemical accidents.

Emergency Response Reviews are designed to:

- Review with a local community and state officials the response procedures and outcomes to a specific chemical accident, affecting that community;
- Share information about chemical response safety practices;
- Develop potential recommendations and lessons learned to more effectively respond to an accidental release in the future;
- Build cooperation among local, state, and federal government agencies.

Emergency Response Reviews are entirely voluntary and may include all local, state, and federal entities involved with the response, as well as the responsible party and their representatives.

This document does not substitute for EPA's regulations, nor is it a regulation itself.

It cannot impose legally binding requirements on EPA, states, or the regulated community, and may not apply to a particular situation based upon circumstances.

This guidance does not represent final agency action, and may change in the future, as appropriate.

SUMMARY OF INCIDENT

At approximately 830 am Monday on 20 August 2007, a release of Anhydrous Ammonia occurred from Double B Foods Inc, in Meridian, Bosque County, Texas. Double B Foods is a kolache production company in the heart of Meridian's town square.

The Bosque County Emergency Management Coordinator (EMC), Bosque County Sheriff's Office (SO), Meridian Fire Department (FD), Clifton FD and Texas Commission on Environmental Quality (TCEQ) responded to the incident.

Meridian FD initially became aware of the release from a volunteer fire fighter, who was working near the site of the release and notified the department.



Bosque County News



Bosque County News

Company officials report that the release originated from a safety release valve on a refrigeration unit on the northwest side of the building, which "popped off" and released. At the time of this review, the "root cause" of the pressure release was not identified.

Local officials lifted the original evacuation advisory in the downtown area after it was determined that the first release had ended; officials felt there was no residual ammonia in the area.

Minutes after this, a second release occurred from the same pressure relief valve. Due to the lower pressure, the second cloud appeared to be larger than the first release.

Initially it was estimated that approximately 1,400 lbs of ammonia was released, however Double B later revised the estimate to approximately 620 lbs.

Workers at the Bosque County Courthouse in Meridian, as well as in neighboring businesses and homes, were evacuated or "sheltered-in-place" during both releases of ammonia.

A Bosque County Sheriff's deputy suffered respiratory distress while trying to evacuate a busy intersection in the area and was taken to Goodall Witcher Hospital in nearby Clifton, Texas. Several other residences reported exposure suffering from minor headaches.

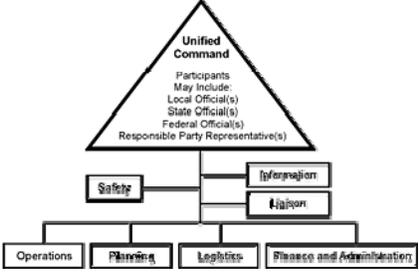
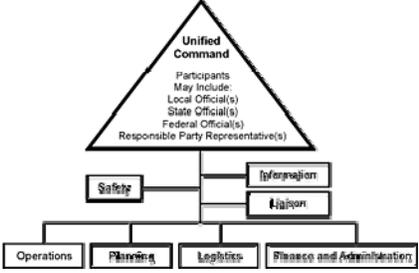
In addition to these two releases on Monday, a 3rd and 4th release occurred during truck off-loading activities on Tuesday and Wednesday. Another Bosque County Sheriff's deputy suffered respiratory distress and burning eyes during the 4th release from the truck transfer, while trying to keep citizens from the release. Additionally, a TCEQ representative was exposed to a potential pocket of residual ammonia later in the day, following the 4th release.

Responding personnel included the following organizations:

- Meridian Fire Department
- Meridian Police Department
- Bosque County Sheriff's Office
- Bosque County Emergency Management Coordinator
- North Bosque EMS
- City of Meridian Emergency Manager
- Double B Employees
- Goodall Witcher Hospital
- Texas Commission on Environmental Quality
- U.S. Environmental Protection Agency

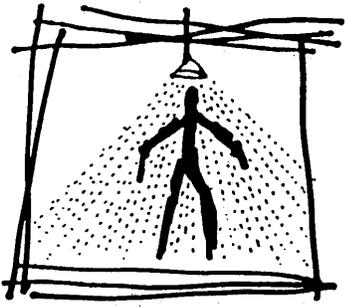
OBSERVATIONS / RECOMMENDATIONS

<p># 1</p>	<p>EPA Region 6 commends the tremendous effort carried out by all response organizations referenced above during the response effort. Throughout the response, numerous local responders displayed professionalism in their efforts.</p> <p>All local response organizations should review their response protocols based on the following: "Response teams to a disaster scene have a responsibility to first protect themselves and their team members. If you or your team is injured, not only the number of victims is increased, but the response is now delayed, resulting in additional resource utilization.</p> <p>DISASTER Paradigm: Safety and Security -- Don't be selfish - protect yourself. Scene priorities: Protect yourself and your team members first</p> <ul style="list-style-type: none"> • Protect the public • Protect the patients • Protect the environment <p>Once your team has safely entered the scene, focus on protecting the public ..."</p> <p style="text-align: right;">"Basic Disaster Life Support Manual, Version 2.5"</p>	
<p># 2</p>	<p>The local responders have already submitted a reimbursement request to the responsible party, who is reviewing the request and will contact the community with their response.</p> <p>Local governments that respond to hazardous materials emergencies should always be aware of the potential for reimbursement under the Local Government Reimbursement program, operated through EPA. More information on this program can be found at: www.epa.gov/region6/lepc</p>	

<p># 3</p>		<p>Response Organizations within Bosque County should ensure they have the 24 hour phone numbers for EPA Region 6 (866-372-7745), State of Texas 24-emergency number (800-322-4012), as well as the phone number for the National Response Center (NRC 800-424-8802), and CHEMTREC (800-424-9300).</p>
<p># 4</p>	<p>Most of the emergency response personnel in Meridian have not received hazardous materials training at the operations or technician level of HAZWOPER. Only a few have training to the awareness level, and have not received the annual refresher training as required under 29 CFR 1910.120 (40 CFR 311).</p> <p>Based on interviews it was determined that between law enforcement, fire fighters and emergency medical personnel only two individuals had been trained to the operations level.</p> <p>Out of these responders, only one had received annual training updates for hazardous materials. As stated in the meeting, "there was a lack of understanding of the risks."</p>	<p>Anyone who responds in a defensive mode to a hazardous materials incident should receive at least operations level HAZMAT training; offensive responses require training at the technician level. All other individuals involved in the incident, including dispatchers, should be trained to a minimum of the awareness level.</p> <p>Awareness level training teaches you to recognize, identify, and notify the proper authorities and to isolate an incident. All levels of HAZMAT training are required to have annual updates that demonstrate competencies.</p> 
<p># 5</p>		<p>A Bosque County Sheriff's deputy suffered respiratory distress while trying to evacuate the area during the 2nd release; another Bosque County Sheriff's deputy suffered respiratory distress and burning eyes during the 4th release from the truck transfer.</p> <p>Response personnel must be aware of their own personal safety when evacuating community members.</p>
<p># 6</p>		<p>No formal command system was established which in turn created confusion and communication problems.</p> <p>All emergency responders should be familiar with procedures on how to use an incident management system.</p> <p>Establishing a command post in one central area, for individuals to receive assignments, report and to gather information, eliminates duplication of efforts and reduces confusion at the incident and in the Emergency Operations Center.</p>

<p># 7</p>	<p>No perimeters or hazard zones were established or marked during the incident, and there was no control over entry or decontamination.</p> <p>This hampered site security and allowed individuals to roam in and out of the contaminated area spreading contamination from the product.</p> <p>Law enforcement should be engaged immediately during an event of this type to ensure sufficient perimeter control.</p>	
<p># 8</p>		<p>EMS notified Goodall Witcher Hospital in nearby Clifton, Texas that they may be receiving potential patients with ammonia exposure; the hospital stepped up their personnel and located equipment necessary to handle any incoming patients.</p> <p>Communication between the various response agencies, facilities and hospitals are vital for the safety of the responders and the community.</p> <p>For much of the incident, communication between the agencies appear to have worked effectively.</p>
<p># 9</p>	<p>Overall the evacuation and "shelter in place" of the courthouse and surrounding businesses was handled credibly by the local responders.</p> <p>Meridian / Bosque County should continue to work on pre-planning activities and drills at key locations, which can increase the effectiveness of the response agencies during an actual incident.</p> <p>Additionally, Meridian / Bosque County should investigate mutual aid agreements between departments and counties, which can increase the pool of assistance that local responders can draw from.</p>	
<p># 10</p>	<p>Double B is in the process of investigating the feasibility of upgrading their alarm systems for ammonia releases.</p> <p>The city has a siren warning system for tornados but it was not used during the ammonia releases, as there were concerns the sirens would draw people outside into the release.</p> <p>The city is working to implement a reverse 911 system with an automatic alarm that can be used for such an event.</p> <p>Most citizens in Meridian have a lack of understanding of how to react to a chemical release; the majority of people outside of the courthouse self-evacuated or "sheltered in place".</p> <p>Meridian / Bosque County should continue to coordinate with Double B on the most effective alarm system that would not only alert company personnel, but may be used to alert portions of the community. This coordination should include community outreach / training on what to do in the event of an ammonia release.</p>	
<p># 11</p>	<p>Meridian / Bosque County should coordinate with Double B personnel on call down lists in the event of an ammonia release. These lists should be tested and updated on a regular periodic basis, such as quarterly.</p>	

<p># 12</p>		<p>During the 4 release event, decisions were made based on no visible evidence of any remaining ammonia in the ambient air.</p> <p>While there may not be visual evidence of the chemical, it may still be present in the atmosphere in an amount that can be harmful to individuals. DO NOT TRUST YOUR NOSE !!</p> <p>Meridian / Bosque County should investigate the purchase and use of simple air monitors to determine ammonia levels after a release.</p> <p>Additionally, TCEQ / EPA / mutual aid with Waco can assist in monitoring of hazardous substances after a release, if requested.</p>
<p># 13</p>	<p>Even though the Meridian fire department applied water during one of the releases to knock down the vapors, the run-off water did not enter the sanitary sewer or storm sewer system. The fire department was cognizant of need to block off the drain points, and used plastic to seal off those points.</p> <p>Whenever possible, environmental concerns should be addressed during an emergency response, as long as actions do not endanger the lives of personnel</p>	
<p># 14</p>	<p>Bosque County does not have a currently active LEPC.</p> <p>All response / planning organizations within Bosque County should meet to determine the need and effectiveness to invigorate an LEPC within the County.</p> <p>Bosque County should work to have industry members participate in the LEPC to pre-plan emergency communications and foster relationships between the agencies and the business members of the community.</p> <p>This industry coordination should include training for ammonia safety / ammonia releases for response personnel.</p> <p>Bosque County should work to have media contacts on their LEPC to pre-plan emergency communications for the dissemination of accurate information to the public.</p> <p>The LEPC can invite State agencies and Federal partners to speak at LEPC meetings and participate in drills to develop working relationships between the agencies and the local responders.</p> <p>State agencies can also provide resources and training materials.</p> <div data-bbox="1101 932 1546 1096" style="float: right;">  </div>	
<p># 15</p>	<p>Many locations within Bosque County may be prone to HAZMAT events, due to the nature and location of businesses and highways</p> <p>Pre-planning activities and drills at key locations can increase the effectiveness of the response agencies during an actual incident.</p>	

<p># 16</p>		<p>Patients were transported to the hospital before being decontaminated. Victims were placed in ambulances and patrol cars without being decontaminated.</p> <p>No precautions were taken to protect responders, the ambulance, patrol cars or their equipment from being contaminated.</p> <p>As a minimum, patients should be given quick water rinse and be placed on plastic to prevent cross contamination of the ambulance and its equipment.</p> <p>Attending medical personnel should have, as a minimum, operations level training, disposable chemical protective suits with gloves, and breathing protection available to them.</p>
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List of applicable standards, regulations, policies, and practices that response and planning personnel should refer to support the above recommendations:

- Occupational Safety & Health Administration (OSHA) 29 CFR 1910.120 - Hazardous Waste Operations and Emergency Response (HAZWOPER)
- OSHA 29CFR 1910.134 - Respiratory Protection (Commonly referred to in the fire service as the Two In/Two Out Rule)
- Environmental Protection Agency (EPA) 40 CFR 311 - Worker Protection
- National Fire Protection Association (NFPA) 471 - Recommended Practice For Responding to Hazardous Materials Incidents
- NFPA 472 - Professional Competence of Responders to Hazardous Materials Incidents
- NFPA 473 - Competencies for Emergency Medical Personnel Responding to Hazardous Materials Incidents
- NFPA 1500 - Standard on Fire Department Occupational Safety and Health Program
- National Incident Management System - U.S. Department of Homeland Security
- NFPA 1561 - Standard on Emergency Services Incident Management Systems
- NFPA 1994 - Protective Ensembles for Hazardous Materials Emergencies
- NFPA 1720 - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments.



Overall, the response efforts by all parties (local, state, and the responsible party) are to be commended. Region 6 EPA hopes the above recommendations can be used to improve the response and preparedness readiness of the community, if a future emergency occurs.

Emergency Response Review (August 27, 2007) Attendees

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| <ol style="list-style-type: none"> 1. David Kaufman, Double B 2. Sonny Morgan, Double B 3. Shane Sharman, Double B 4. David Keys, RLO GDEM, TX DPS 5. Larry Betik, Double B 6. Scott Martin, Meridian Police Department 7. Charles E. Jones, Bosque County Sheriff 8. Mike Mabry, Bosque County Deputy 9. Alejandro Araujo, Double B 10. Ron Bowlin, Double B 11. Stephen Mason, EPA Region 6 | <ol style="list-style-type: none"> 12. Karen McCormick, EPA Region 6 13. Mike Goldsworthy, DHS-FEMA 14. Dewey Ratliff, Bosque County EMC 15. Jeff Keese, City of Meridian 16. Linda Thiele, North Bosque EMS 17. Mike Walker, City of Meridian 18. Wilson Snyder, TCEQ 19. Anna Dunbar, TCEQ 20. Tressa Tillman, EPA Region 6 21. Matt Reed, EPA Intern 22. Angie Mills, EPA-START |
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